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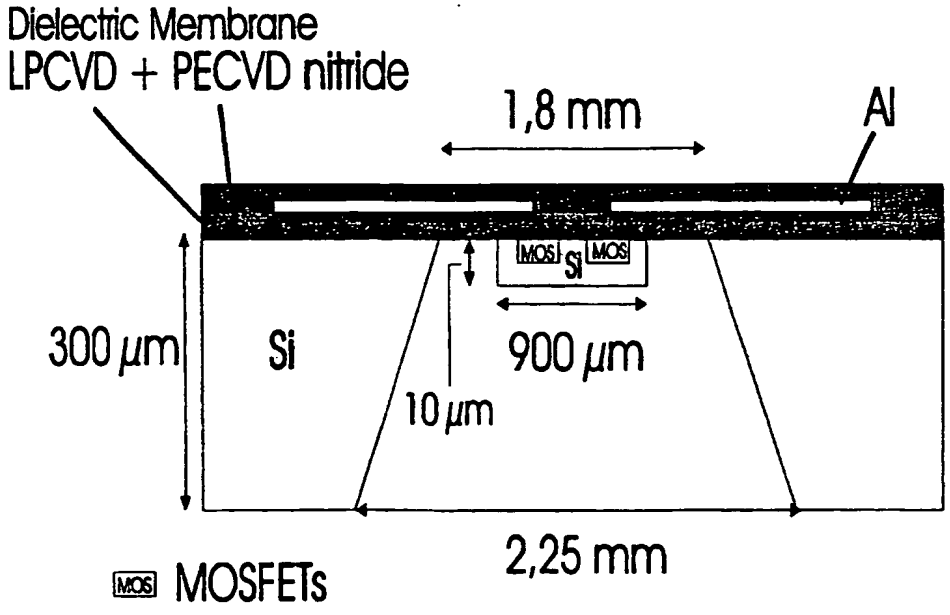
(54) Title: LOW-POWER SENSOR



(57) Abstract: The invented MOSFET array gas sensor has been fabricated using silicon bulk micro machining. A heating resistor, a diode used as temperature sensor and 4 gas-sensitive FETs are located in a silicon island suspended by a dielectric membrane. The membrane has a low thermal conductivity coefficient and therefore thermally isolates the electronic components on the silicon island from the chip frame. This low thermal mass device allows the reduction of the power consumption to a value of 80 mW for an operating temperature of 175 °C. This low power MOSFETs gas sensor array is suitable for applications in portable gas sensors instruments and in automobiles.

WO 00/75649 A1

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